

REMARKS

Claims 1-20 are currently pending. Favorable reconsideration is respectfully requested in view of the remarks presented herein below.

In paragraph 2 of the final Office action ("Action"), the Examiner rejects claims 1-19 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,865,227 to Chan ("Chan"). Applicants respectfully traverse this rejection.

In order to support a rejection under §102, the cited reference must teach each and every claimed element/feature. In the present case, Chan fails to anticipate claims 1-19 because Chan fails to disclose each and every claimed element as discussed below.

Independent claim 1 defines a method for approximating a motion vector for an image block. The method includes, *inter alia*, deriving a first set of vectors from motion vectors of neighboring blocks in the same frame and the corresponding block and its neighboring blocks in one or more preceding and/or subsequent frames; deriving a set of candidate vectors from one or more motion vectors of neighboring blocks in the same frame and the corresponding block and its neighboring blocks in one or more preceding and/or subsequent frames; analyzing the first set of vectors; and selecting one of the candidate vectors on the basis of the analysis, wherein the steps of analyzing and selecting involve comparison of motion vectors to determine similarity of motion.

Chan fails to anticipate the method of claims 1 for at least the reason that Chan fails to disclose or suggest analyzing the first set of vectors and selecting one of the candidate vectors on the basis of the analysis, wherein analyzing and comparing involves comparison of motion vectors to determine similarity of motion as claimed.

Chan discloses a method for concealing errors in video data. The method includes, *inter alia*, decoding a first set of K motion vectors; estimating a second set of motion vectors corresponding to a number N-K motion vectors (N being the total number of macroblocks in the packet and K being the point at which a corrupt motion vector was detected in the packet); combining the set of decoded motion vectors and the set of estimated motion vectors to create a candidate set of motion vectors. The

candidate set is then used to perform motion compensated temporal replacement of the texture data and is then evaluated under an "image smoothness" test (see column 3, lines 50 to 63). This process is repeated N-K times. Then the candidate motion vector set with the best smoothness measure is selected to replace the corrupted motion vectors (see column 4, lines 28 to 30). Although, Chan discloses creating a set of decoded motion vectors, a set of estimated motion vectors, and arguably a set of candidate motion vectors, nowhere in Chan is there any disclosure or suggestion of analyzing the motion vectors and selecting *one* of the candidate vectors as claimed.

The Examiner asserts that Chan discloses analyzing the first set of motion vectors and selecting one of the candidate vectors as claimed in as much as Chan discloses that "[s]ets of motion vectors that produce a best image smoothness measure of the texture data are selected from the first and second sets." More specifically, the Examiner concludes that "the selection [in Chan] is based on a comparison between first and second sets, Kbest decoded MVs and N-Kbest estimated MVs." The Examiner's assertion is unfounded for the following reasons.

First, contrary the Examiner's assertion, the first and second sets which are compared in Chan do not represent the Kbest decoded MVs and the N-Kbest estimated MVs. To the contrary, Chan discloses that the selected set of motion vectors contains Kbest decoded motion vectors and N-Kbest estimated motion vectors. The method of Chan first creates a set of motion vectors that includes K decoded and N-K estimated vectors, where N equals the number of macroblocks in a packet and K equals the point at which a corrupted motion vector was detected. The set of decoded and estimated vectors is then used to calculate a texture smoothness value. Then a second set of vectors is created by decreasing the number of decoded vectors and increasing the number of estimated vectors and so on until the set consists of only estimated vectors. Finally, the smoothness values are compared and the number Kbest of decoded vectors and the number N-Kbest of estimated vectors to include in the finally set of vectors is selected. See column 4, lines 17-30 of Chan.

Second, even if one were to interpret the motion vector sets of Chan to be equivalent to the claimed first and candidate vector sets, nowhere in Chan is there any disclosure or comparing the motion vectors to determine similarity in motion. To the contrary, Chan only discloses comparing a smoothness values produced using a set of candidate vectors, which is not equivalent to comparing the motion vectors themselves to determine similarity in *motion*.

At best Chan discloses selecting a set of motion vectors based on a comparison of smoothness values. Nowhere in Chan is there any disclosure or suggestion of comparing the motion vectors to determine similarity in motion as claimed. Therefore, Chan cannot possibly be interpreted as anticipating claim 1 because Chan fails to disclose each and every claimed element.

Claims 2-19 variously depend from independent claim 1. Therefore, claims 2-19 are not anticipated by Chan for at least those reasons presented above with respect to claim 1. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection of claims 1-19 under 35 U.S.C. § 102(e) as anticipated by Chan.

In paragraph 3 of the Action, the Examiner rejects claims 1-7 and 10-14 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6, 700,934 to Lin ("Lin"). Applicants respectfully traverse this rejection.

As discussed above, independent claim 1 defines a method of approximating a motion vector for concealment of a lost or damaged motion vectors. The method includes, *inter alia*, deriving a first set of vectors; deriving a set of candidate vectors; analyzing the first set of vectors; and selecting one of the candidate vectors on the bases of the analysis. Lin discloses a method for detecting corrupted motion vectors in MPEG bitstream. However, Lin fails to anticipate the method of claims 1-7 and 10-14 because Lin fails to disclose each and every claimed element. More specifically, Lin fails to disclose selecting one of a set of candidate vectors as claimed.

The Examiner asserts that Lin discloses a method a claimed in as much as Chan discloses a method of detecting motion vector errors which includes comparing

motion vectors to determine similarity in motion. More specifically, the Examiner points to Fig. 8 of Lin. However, nowhere in Fig. 8 or elsewhere in Lin is there any disclosure of deriving a set of candidate vectors from one or more motion vectors of neighboring blocks in the same frame and the corresponding block and its neighboring blocks in one or more preceding and/or subsequent frames and selecting one of the candidate vectors on the basis of the analysis, wherein the steps of analyzing and selecting involve comparison of motion vectors to determine similarity of motion as claimed.

Claims 2-7 and 10-14 variously depend from independent claim 1. Therefore, claims 2-7 and 10-14 are not anticipated by Lin for at least those reasons presented above with respect to claim 1. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection of claims 1-7 and 10-14 under 35 U.S.C. § 102(e) as anticipated by Lin.

In paragraph 5 of the Action, the Examiner rejects claim 20 under 35 U.S.C. § 103(a) as being unpatentable over Chan in view of U.S. Patent No. 6,782,053 to Lainema ("Lainema"). Applicant respectfully traverses this rejection.

Claim 20 variously depends from independent claim 1. Therefore, claim 20 is patentable over Chan for at least those reasons presented above with respect to claim 1. Lainema discloses a method of coding video frames in a telecommunication system. However, Lainema fails to overcome the deficiencies of Chan.

Since Chan and Lainema each fail to disclose or suggest a method of approximating a motion vector as recited in claim 1 (see discussion above), the combination of these two references cannot possibly disclose or suggest a method as claimed. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection of claim 20 under 35 U.S.C. § 103.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Penny L. Caudle Reg. No. 46,607 at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.147; particularly, extension of time fees.

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Respectfully submitted,

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